Patent Ductus Arteriosus Endarteritis
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Clinical History
A 53 year-old woman presented to the emergency department with a two-month history of left anterior chest pain; and a 5-day history of shortness of breath, bilateral calf pain and lower extremity swelling. An ultrasound evaluation of the lower extremities revealed no evidence of deep venous thrombosis. A chest CT scan demonstrated a possible patent ductus arteriosus (PDA), as well as an adjacent filling defect in the distal main pulmonary artery (PA). Transthoracic cardiac ultrasound (TTE) and cardiac CT scan (CCT) were requested for further evaluation for suspected congenital heart disease.

Findings
TTE revealed a mobile echoic mass in the lumen of the proximal left pulmonary artery (LPA), which appeared to be attached to the arterial wall. In addition, Doppler imaging showed continuous color flow on the lesser curvature of the distal aortic arch and subtle continuous flow velocity just distal to the mass in the LPA, suggestive of a PDA.

CCT demonstrated a funnel-shaped arterially-enhancing connection between the aortic arch and the distal main pulmonary artery, consistent with a PDA. A multi-lobulated non-enhancing filling defect was detected in the distal main pulmonary, with extension into the proximal LPA. The filling defect was attached to the arterial wall at the level of PDA.

The patient was treated with antibiotics. On a 4-week follow-up TTE (not shown), the echoic mass decreased in size from 12 x 12mm to 7 x 12mm.

Discussion
In this case, the combination of a PDA, lack of contrast enhancement of the mass on delayed CCT, and the decreased size of the mass following antibiotics treatment favors the diagnosis of PDA endarteritis. The differential diagnosis included metastasis and angiosarcoma, although these entities are less likely because they typically show enhancement on delayed CCT or cardiac MRI, have no relation to PDA, and are unlikely to decrease in size without targeted treatment.

PDA endarteritis (also referred to as PDA-related endocarditis) is a rare entity with an estimated annual risk of <0.25% in patients with PDA. Both infective (IE) and non-bacterial (NBE) endocarditis/endarteritis have been described. Although wide use of antibiotics decreased the incidence and mortality of IE, it has remained a potentially fatal condition in patients with PDA. NBE (also known as marantic endocarditis) is characterized by deposition of sterile fibrin and platelet aggregates at the sites of microscopic injury to the endothelium of the PA, which may be caused by turbulent blood flow secondary to the PDA. Several conditions have been associated with NBE, including circulating immune complexes, disseminated intravascular coagulopathy and carcinomatosis.

REFERENCES

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